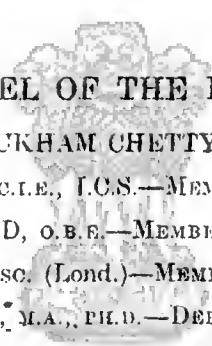




GOVERNMENT OF INDIA
DEPARTMENT OF COMMERCE

REPORT
OF THE
INDIAN TARIFF BOARD
ON THE
BICHROMATES INDUSTRY

नियमित संघर्ष



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REPORT ON THE BICHROMATES INDUSTRY

This Tariff Board was set up by the Government of India, Department of Commerce, in their Resolution Reference to the Board. No. 218-T (55)/45, dated the 3rd November 1945 (Appendix I) for the purpose of investigating claims from industries which were started or developed in wartime, or the starting of which was considered essential by Government under conditions created by the war, to assistance or protection during the transition period, pending the establishment of a permanent machinery to give effect to their long-term tariff policy in the post-war period. The bichromates industry, the starting of which was considered essential by Government under wartime conditions, was one of the industries included in this Resolution.

2. The Board has to report whether the industry satisfies the following conditions :--

Scope of inquiry. (1) that it is established and conducted on sound business lines; and

(2) (a) that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance; or

(b) that it is an industry to which it is desirable in the national interest to grant protection or assistance and that the probable cost of such protection or assistance to the community is not excessive.

Where a claim to protection or assistance is found to be established, *i.e.*, if condition (1) and condition (2) (a) or (b) are satisfied, the Board will recommend—

(i) whether, at what rate and in respect of what articles, or class or description of articles, a protective duty should be imposed;

(ii) what additional or alternative measures should be taken to protect or assist the industry; and

(iii) for what period, not exceeding three years, the tariff or other measures recommended should remain in force.

In making its recommendations, the Board is required to give weight to the interests of the consumers in the light of the prevailing conditions and also to consider how its recommendations would affect industries using the articles in respect of which protection may be granted.

The Board has further been requested to complete the inquiry with all possible expedition in order that relief, where found necessary, may be afforded without delay and in good time.

3. In our report on calcium chloride, we have dwelt at some length on a comparison of the terms of reference of this Board with those of the Tariff Boards set up before 1939. We do not propose to repeat the same discussion in this report, but the main points may be set out here for facility of reference. The conditions which must be fulfilled by an industry before qualifying for protection or assistance are now less rigid than previously, because a liberal protective policy is considered advisable in a country like India which has yet considerable leeway to make up in industrialisation, the rapid progress of which is one of the declared objectives of Government policy and forms the general background against which the Board is holding its inquiries. As action to be taken now will be part of a short-range policy, pending formulation of a permanent tariff policy, the broad criterion adopted is that, unless an industry started during wartime suffers from some inherent economic handicaps, incapable of being remedied, there is a *prima facie* case for helping the industry until a fuller and more detailed examination can be undertaken at a later stage under normal conditions and as part of a long-term policy of protection. This also is one of the reasons why the period for which protection or assistance may be recommended has been limited to a period not exceeding three years.

4. On the 28th November 1945, the Board issued a press communiqué inviting associations, firms or persons including producers, importers and consumers directly interested in this industry or dependent upon this industry for their raw materials, who wished their views to be considered by the Board, to submit their representations by the end of December 1945. The representations were required to be supported by facts and figures regarding, *inter alia*,

- (1) domestic demand for the commodity;
- (2) volume and cost of imports;
- (3) cost of production;
- (4) general financial position of the producers; and
- (5) the exact nature of protection or assistance applied for.

The Board also issued a detailed questionnaire for producers inviting replies by the 31st January 1946. All Provincial Governments and Administrations were addressed and requested, besides giving their views, to furnish the Board with full information regarding the works or factories engaged in the production of bichromates, their estimated annual output, availability of raw materials for the industry within the Province/Administration, sources and character of demand, possibilities of extension or stabilization of the present development and likely effect of the grant of

protection to this industry on other industries using bichromates. The views of chambers of commerce and associations were invited through a circular letter. As the bichromates industry was started during wartime under direct encouragement from the Supply Department, that Department was requested to furnish the Board with such information regarding the present state of development of the industry and its future prospects as might be available with the Department and might be of use to the Board in the investigation. Two members of the Board, *viz.*, Mr. Desai and Dr. Nazir Ahmad, paid a visit to the Premier Chromate Works in Bombay on the 17th April 1946. The Krishna Chemical Works in Calcutta was visited by Dr. Nazir Ahmad on the 13th April 1946. The bichromate plant of the Buckingham and Carnatic Company, Ltd., Madras, was visited by Mr. Desai on the 29th April 1946. Some factories were also visited by the Technical Adviser attached to the Board for the purpose of investigation into chemical industries. Oral evidence of representatives of producers, consumers and importers was taken at Bombay on the 18th, 19th and 20th April 1946, and a list of the witnesses examined is appended. (Appendix II.)

5. The Indian bichromates industry is essentially a wartime creation. Before 1939, all the bichromates consumed in the country were imported, the principal source of supply being the United Kingdom, the other sources being Germany, Japan, the United States of America and China. During the war, the consumption of bichromates increased very substantially (nearly four to five times) as a result of the increased requirements of the Defence Services for khaki cloth and tanned leather. The demand had to be met somehow; and, as only limited quantities could be spared from the United Kingdom and as the United States could not supply large quantities because of the acute shipping position, it was found necessary to start the industry in the country which thus came to be established in 1940. To encourage investment in the industry, the Government of India gave an assurance of post-war protection in the following terms (*vide* press note issued by the Commerce Department on the 26th March 1940) :—

“ The Government of India have had under consideration the need for assuring certain specified industries, the starting of which Government consider essential under conditions created by the war, of a measure of protection which may be necessary after the war to enable such industries to continue their existence. Such specified industries, which have been promoted with the direct encouragement of Government may feel assured that, if they are conducted on sound business lines, they will, by such measures as Government may devise, be protected against unfair competition from outside India.

In view of the fact that war conditions have shown that the indigenous production of bichromates required for the textile and

tanning industries is vital to the security of two of India's major industries, Government are prepared to give an assurance on the lines indicated above to any concern which undertakes the production of bichromates."

In consequence of this assurance, a number of factories were started in various parts of India. A list of factories which are still in production will be found in Appendix III attached to this report. It will be observed that Bombay is the principal centre of production; Cawnpore, Madras, Calcutta and Mysore being the other places where the industry is located. The cost of production in the initial stage was naturally high as compared with the cost of the imported product. The expansion in output was rapid and very soon the industry developed capacity in excess of the peacetime demand. The technique of production was also being improved, notwithstanding wartime difficulties of securing up-to-date plant and equipment. The Government of India deputed Dr. N. R. Damle (who was then Industrial Chemist to the Department of Industries of the Government of Bombay) to England to study the manufacture of bichromates in that country. Another contribution which the Central Government made to the orderly development of the bichromates industry was the promulgation, on the 25th October 1945, of a Chrome Compounds Control Order which seeks to regulate the production, distribution and prices of the indigenous products. A copy of this Order, amended up to date, will be found in Appendix IV attached to this report. The Board understands that the Chrome Compounds Control Order has served its purpose and is likely to be withdrawn by the end of May 1946. The cessation of hostilities with the consequent danger of import of bichromates from abroad at relatively low prices led the industry to apply for assistance or protection in response to the Government press communiqué of the 23rd April 1945, which invited applications on the subject. An application for protection was made in October 1945 by the All-India Bichromate Manufacturers' Association, Bombay, of which most of the leading manufacturers are members, the case of the industry being referred to the Board in November 1945, as already stated.

6. The case for protection to the bichromates industry has been collectively stated by the All-India Bichromate Industry's case for protection. Manufacturers' Association, in its letter, dated the 19th December 1945. The salient points of the representation may be summarised as under:—

- (1) the industry was started during wartime under a specific assurance of protection which must now be given;
- (2) the industry has developed productive capacity sufficient to meet the total requirements of the country;
- (3) the cost of production is high because of the comparatively higher prices of raw materials, *e.g.*, soda ash, fuel and sulphuric acid, than in other countries such as the United Kingdom;

(4) the industry served a vital purpose at a crucial period indicating the importance of its place in national economy; and

(5) given assistance in the initial period, the industry bids fair not only to survive foreign competition with the minimum of protection in the long run, but also to capture export markets in adjoining countries.

7. The raw materials required for the manufacture of sodium bichromate, which is the principal variety of

Process of manufacture. bichromate used in the country, are chrome ore, soda ash, limestone, sulphuric acid and fuel in the form of either coal or fuel oil or both. India is one of the principal sources of supply of chrome ore, the other countries having chrome ore being Turkey, Rhodesia, Russia and Brazil. In India, the chief sources of supply of chrome ore are in Baluchistan, Mysore and Chaibasa in Bihar. The Baluchistan ore is said to be the best. Some of it contains more than 50 per cent, of chrome oxide (Cr_2O_3); but most of it is exported to the United Kingdom where it is used, according to information available to us, in the production of munitions rather than of bichromates. The producers of bichromates in India have to be content with ore containing less than 48 per cent, of chrome oxide. Different factories obtain their own requirements from different areas according to convenience of location, e.g., the factory at Belagula in Mysore uses the Mysore ore.

8. The first process in the manufacture of bichromates is roasting of the ore which means that finely crushed chromite ore is roasted with lime and soda ash on the bed of a reverberatory furnace at about 1100° temperature, due care being taken to avoid the fusion of the mass. The chemical reaction in the furnace results in the production of sodium chromate (Na_2CrO_4) after about 4 hours. The next process is lixiviation which consists in charging the roasted mass in rectangular mild steel tanks with beds of gravel which are covered by perforated steel plates which help filtration and extraction of liquor. A liquor of concentration above 40° Be' is obtained in 10 to 12 hours and is primarily a solution of sodium chromate (Na_2CrO_4). The third process is acidification. The strong liquor obtained from the process of lixiviation is mixed with sulphuric acid; the resultant reaction causes the formation of sodium bichromate and sodium sulphate. Sodium sulphate separates out on cooling. The decanted liquor which is mainly a solution of sodium bichromate is transferred to mild steel pans fitted with mechanical stirrers for further concentration. This process has to be repeated until traces of sodium sulphate are finally removed. When the liquor reaches about 68° Be' it is drained to the crystallizing pans. Crystals appear in a couple of days; they are then centrifuged to free them from the mother liquor. The crystals are then packed in steel drums ready for despatch.

9. Potassium bichromate is produced by the double decomposition of sodium bichromate with some soluble salt of potassium

such as potassium chloride or potassium nitrate. Sodium bichromate of about 40 to 45° Bé is charged in boiling pans to which the potassium salt is added in small quantities. The liquor is then transferred to crystallizing pans. The crystals formed are removed, centrifuged and packed in drums.

10. It is understood that the process of manufacture adopted in India is more or less the standard one which is adopted in other countries also. There is another process of manufacture with the aid of the electrolytic cell but this method is not being followed by any of the factories in India.

11. The main by-product in the manufacture of bichromates is sodium sulphate, the disposal of which has become a problem to the bichromates industry in India. For every ton of sodium bichromate, one ton of sodium sulphate becomes a by-product. It is not that there is no demand for sodium sulphate in the country. In fact, sodium sulphate is imported to meet the requirements of the paper, textile, tanning and glass industries, the pre-war imports being 1,750 tons per annum. The difficulty of our bichromates industry lies in the fact that the sodium sulphate which is left over after the production of bichromates is not as free from chrome content as the consuming industries would like it to be. It is clear, however, that so long as the industry is not able to solve the problem of disposal of sodium sulphate, it will continue to suffer from the handicap of inflated costs, making it difficult for the industry to stand competition with foreign imports. We would urge upon the All-India Bichromate Manufacturers' Association to tackle this problem as a body, if necessary, by subsidizing research on an adequate scale either in the Department of Industries of the Bombay Government or in the Department of Chemical Technology of the Bombay University.

12. Another feature to which the Board would like to invite the attention of the Association is the high cost of labour and overhead charges. In some factories, overheads account for as much as 23 per cent. of the total cost of production indicating room for economy. Location of different processes could be improved or "streamlined" with consequential saving in labour and handling charges. Mushroom growth of factories during wartime is understandable, but with the reappearance of keen competition from imports, some of the existing factories, which were established with small capital and make-shift equipment will have to go out of production and the surviving factories will have to be reorganized so as to constitute economic and efficient units of production. The Board is advised that a minimum output of 600 tons per annum of bichromates is necessary to constitute an economic unit of production, although a factory designed for an output of 1,000 tons would be a

Need for rationalisation of industry.

still better proposition. On this basis, and taking into consideration the probable demand for bichromates in the country in the next three years, not more than four or five factories would be required as against the existing number of over 17.

13. Bichromates are used in various industries for different purposes. Before the war, the largest consumer of bichromates was the leather-tanning

Uses. industry, but during the war the largest demand came from the textile industry for the purpose of mineral khaki dyeing. Bichromates are an important ingredient in the production of pigments and paints which is the third largest use of the chemical. The other industries using bichromates are the match industry, wood preservation industry, munitions production, chrome plating and manufacture of several chemicals.

14. Appendix V attached to this report gives the figures of imports of both sodium and potassium bichromates into the country since 1936-37 by

Imports. volume, value and average value, total as well as countrywise. The average value per cwt. shown in the statement is the c.i.f. price Indian port. The statement shows that the United Kingdom was the main source of supply of bichromates both prior to the war and during war. The c.i.f. prices before the war ranged from Rs. 15 to Rs. 25 per cwt., the lower prices being those of imports from Japan. There was an immediate rise in the price on the commencement of the war, but thereafter the c.i.f. price remained steady at roughly Rs. 45 per cwt. during all the war years. The American price was slightly lower, probably owing to lend-lease supplies. Advices are now being received from exporters in both the United Kingdom and the United States indicating that they are in a position to export bichromates to India in large quantities. At present imports of bichromates are not being permitted because of the development of more than adequate capacity in the country.

15. The first factory for the production of bichromates was set

Domestic production. up in 1940 and since then a number of factories have been established scattered all over the country. The total rated capacity of Indian factories is 6,226 tons per annum including the capacity of 1,080 tons of the Buckingham and Carnatic Company, Limited, Madras, which produces bichromates for consumption in its own mills. The actual production has, however, fallen considerably short of the total productive capacity because of several handicaps, such as scarcity of raw materials, difficulty of getting power and absence of adequate offtake. The highest production so far attained by the industry as a whole was 3,255 tons in 1945. This figure includes 995 tons produced by the Buckingham and Carnatic Company, Madras, and used in its own mills for khaki dyeing. According to the All-India

Bichromate Manufactureres' Association, production during the last three years has been as follows:—

Year.	TONS.
1943	2,500
1944	3,000/3,500
1945	4,000

16. Some of the factories have plans for expansion which would raise the total capacity of the Indian industry. For instance, the Government Bichromate Factory at Belagula, Mysore State, has a scheme to increase production from the present capacity of 240 tons to 600 tons per annum. Similarly, the Union Chemical Industries, Calcutta, have at present a capacity for only 56 tons of bichromates, but the company has a new factory under construction which will have a daily production capacity of three tons, *i.e.*, a capacity of 1,000 tons per annum. At the same time, it is not unlikely that some of the smaller factories will go out of existence as they will not be able to compete in the matter of price with larger concerns, once keen competition begins with the arrival of imports. In any case, it is clear that the country has far more capacity than would be warranted by the extent of demand for the product.

17. Before the war there was no local production of bichromates and therefore the statistics of imports afford **Domestic consumption** reliable guidance as to the demand for bichromates in the country. On an average of the three years, 1936-37 to 1938-39, the pre-war imports were of the order of 1,200 tons per annum. The bulk of this quantity was used in the tanning industry. During wartime, the demand grew steeply as a result of rapid expansion of the requirements of both the textile and the tanning industries. At one time during the war, the country was consuming as much as 5,800 tons per annum. This was met by supplementing local production by imports from both the United Kingdom and under lend-lease from the United States. It is difficult to forecast accurately what will be the average annual consumption per annum of bichromates by the various industries but the following figures arrived at after considerable discussion with the interests concerned appear to the Board to indicate the likely trend of consumption in the next three years:—

	TONS.
(a) Tanning industry	1,000
(b) Textile industry	750
(c) Paint and pigment industry	500
(d) Other industries	150
Total ..	2,400

The All-India Bichromate Manufacturers' Association would place the Indian demand at a much higher figure, its estimate being 1,500 tons for the tanning industry; 1,500 tons for the textile industry; 500 tons for the paint industry; and 250 tons for the other industries; making a total of 3,750 tons. It may be mentioned here that the Imperial Chemical Industries (India), Limited, who have considerable experience of the bichromate trade in the country, estimate the future Indian demand at only 1,500 tons, their ground for the low figure being that the military authorities have switched over from khaki colour to olive green and that vat and sulphur dyes are likely to replace bichromates in the textile industry in which bichromates are used at present or were used during wartime.

18. Though it is a matter of speculation as to what the future demand may be, from the evidence placed before the Board, we consider that the post-war demand should be roughly twice the pre-war consumption, *i.e.*, it should be in the neighbourhood of 2,400 tons per annum. The maintenance of the demand for bichromates will depend to some extent, at any rate, upon the quality which the home industry is able to turn out as also upon the price at which the article will be made available. Scope for expansion in consumption of bichromates exists in the tanning industry and still more in the paint and pigment industry whereas the demand may be very much reduced in the textile industry. The figures of imports during the war years when the rising local production also swelled the quantity available for consumption reflect a marked rise in the consumption of bichromates during wartime and the recent fall in the same. At one time, the position of stocks on hand became so serious that a lend-lease consignment had to be diverted to other countries with a view to allaying the fears of the home producers.

19. During wartime, as there were two sources of supply of bichromates, *viz.*, home production and **Wartime expedient imports**, Government made an arrangement for **of pooling**. The pooling of all the supplies and their release at a fixed pool price which was worked out on the basis of cost of importation of imports and cost of production of indigenous manufacturers. At first, the pool price was Rs. 80 per cwt. naked, but it was later revised to Rs. 88 per cwt. packed, which is still the prevailing price. Under the pool arrangement, every manufacturer participating in the pool was costed and his fair selling price fixed and he was paid accordingly.

20. Considering that the industry was started during wartime and had often to rest content with make-shift arrangements and equipment, it is creditable **Quality of home production.** that the quality of the home-made bichromates has generally given satisfaction to the consuming industries. The only industry which complained regarding the quality of the Indian

bichromates was the paint industry where the slightest impurity has serious deleterious effects on the quality of the paints and pigments produced. Complaint as regards quality was also made, though to a less extent, by the tanning industry. Both these industries insist on a minimum purity of 98 per cent. and a sodium sulphate content not exceeding 1 per cent. of the total. No specifications were laid down either by Government or by the tanning and paint industries and therefore it was not established that the indigenous product was incapable of conforming to the standard required by these two industries. The All-India Bichromate Manufacturers' Association stated before the Board that it would be possible for the members of the association to supply the quality desired by these industries. The Association has agreed to make arrangements for supplying standard quality of bichromates to consuming industries and particularly to the paint and tanning industries, the standard being a quality at least 98 per cent. pure with the sulphate content not above 1 per cent. and air-tight packing. Representatives of the paint industry agreed that, if these specifications were complied with, the Indian product would be quite acceptable to the paint industry. The textile industry has no complaint as regards quality since a slight admixture of sodium sulphate does not render the bichromates unsuitable for the purpose for which they are required by the mineral khaki dyers. The Bichromate Manufacturers' Association should insist on its members testing each drum before it leaves the premises of the factory and maintaining a record of such tests so that confidence in the home product may be established and such prejudice against it as still lurks in the minds of the Indian industries may be dispelled. The Association will be well advised to set up some machinery to ensure that instructions in this behalf issued by the Association to its members are strictly complied with.

21. The cost of production of bichromates varies very widely from factory to factory. Factories participating in the bichromate pool to which a reference

Cost of production. was made earlier in this report were costed from time to time to determine what price should be paid to them and what should be the pool price. The latest costing carried out for this purpose and on which the present pool price of Rs. 88 per cwt. of sodium bichromate is based, shows that the cost of production per cwt. varied from Rs. 64 in the case of the Cawnpore Chemicals to Rs. 102 in the case of the Golden Chemicals, Bombay. The cost of production figures of the other factories were as follows:—

	Per cwt.	Rs.
Pioneer Chromate Works, Bombay	72	
Premier Chromate and Chemical Works, Bombay	81	
Indentors' Syndicate, Bombay	84	
The Government Bichromate Works, Mysore	96	
Miscellaneous concerns	100	

The Board had the two leading factories in Bombay costed through its own Cost Accounts Officer for determining what should be the cost of production of an efficient factory working under optimum conditions. The two factories costed for this purpose were the Pioneer Chromate Works and the Premier Chromate and Chemical Works. The statement given below shows the results of these investigations :—

Statement showing comparative cost of production of 1 ton of sodium bichromate.

	Pioneer Chromate and Chemical Works, Limited.			Pioneer Chromate Works, Limited.		
	November 1945 to March 1946.		October to December 1945.		January to March 1946.	
	Quant- ity, TONS.	Rate per ton, RS.	Quant- ity, TONS.	Rate per ton, RS.	Quant- ity, TONS.	Rate per ton, RS.
I. Manufacturing expenses—						
1 Raw materials—						
(a) Chrome ore	1.91	103	196.73	2.00	115	230.00
(b) Soda ash	1.32	165	217.80	1.30	195	253.50
(c) Lime	1.38	80	110.40	0.84	86	72.24
(d) Lime stone	0.64	280	179.20	0.65	280	182.00
(e) Sulphuric acid	..	..	..	..	..	..
Total, raw materials	..	..	704.13	..	..	737.74
2 Power and fuel	..	..	184.00	..	..	185.00
3 Ordinary current repairs, maintenance of buildings, plant and machinery	..	..	92.20	..	..	30.80
4 Labour (including bonus)	..	..	292.00	..	..	178.20
5 General services, supervision and local office charges	..	..	68.00	..	..	86.70
6 Expenditure on quality control, research and development	..	..	3.00	..	..	13.50
7 Packing charges	..	..	34.00	..	..	60.00
8 Miscellaneous, water, lighting, sundry stores, royalties, etc.	..	..	78.50	..	..	79.10
Total	..	..	1,455.80	..	..	1,370.74
				
						1,409.14

Statement showing comparative cost of production of 1 ton of sodium bichromate—cont.

	Premier Chromate and Chemical Works, Limited.		Pioneer Chromate Works, Limited.	
	November 1945 to March 1946.		October to December 1945.	
	Quantity.	Rate per ton.	Quantity.	Rate per ton.
II. Overhead charges—				RS.
9 Depreciation	27.00	..
10 Interest on working capital	15.00	..
11 Managing agents' charges
12 Directors and auditors' fees	11.00	..
13 Insurance	3.00	..
14 Rents, rates and taxes, excluding income-tax and royalties.	7.00	..
15 Selling expenses	8.00	..
16 Miscellaneous	3.00	..
Total	74.00	..
Gross total (I and II)	1,529.80	..
Credit for materials recovered
Net total	1,529.80	..
i.e.	per ton, 76.49 per cwt.	..
Total quantity produced	..	251 tons.	116 tons.	116 tons.

The cost of production works out at Rs. 76 to Rs. 78 per cwt. without provision for profit.

22. To arrive at a reasonable cost of production of sodium bichromate, applicable to the industry as a whole, the Board had first to fix what should be the minimum output of a factory to form an economic unit. An output of 600 tons per annum has been taken as the minimum production of an economic unit. The details of costs were then scrutinised. In the raw materials there is considerable scope for economy. For 1 ton of sodium bichromate, the raw materials required should be not more than as follows :—

	TONS.					
Chrome ore	1.70
Soda ash	1.00
Lime stone	1.25
Sulphuric acid	0.60

as against 2.08, 1.40, 1.23 and 0.78 tons respectively, actually used by the Pioneer Chromate Works. According to Dr. Damle who made a minute study of the manufacture of bichromates in the United Kingdom, the raw materials required ideally should be 1.20 tons of chrome ore, 1.00 ton of soda ash, 0.60 ton of sulphuric acid and 0.66 ton of lime stone. We are advised that it would be more economical for a bichromate factory to use lime stone instead of lime and that 1.25 tons of lime stone per ton of sodium bichromate should be adequate. We recognize that the full economy in quantities suggested by Dr. Damle is not capable of attainment in the smaller factories generally existing in this country and therefore have made liberal provision in our calculations for the quantity of raw materials required under the conditions of the industry in this country. We have taken 1.70 tons of chrome ore as against 1.20 tons suggested by Dr. Damle. Similarly, we have taken 1.25 tons of lime stone instead of 0.66 ton of lime suggested by Dr. Damle. We have not varied the figures of soda ash and sulphuric acid in view of the fact that these quantities have very nearly been attained in actual production in the two Bombay factories. This is particularly so in the case of sulphuric acid. The Bichromate Manufacturers' Association insisted that in so far as soda ash was concerned 1.00 ton assumed by the Board erred on the low side and that a higher figure would be more appropriate. We have not accepted this contention of the Association in arriving at the representative cost, but have taken the views of the Association into consideration in fixing the fair selling price and working out the measure of protection required.

23. (a) *Sulphuric acid.*—In the matter of prices we have not made any substantial change from those actually prevailing, except in the case of sulphuric acid where we have assumed Rs. 160 per ton as against Rs. 280 per ton which is being paid by the two

Prices of raw materials.

Bombay factories for their requirements of sulphuric acid. The reason why we have adopted the figure of Rs. 160 per ton for sulphuric acid is that we are advised that sulphur should now be available in the country at the rate of Rs. 150 per ton on which basis the price of sulphuric acid should not exceed Rs. 100 at the outside. Normally the price of sulphuric acid should be not more than one-third of the price of sulphur *plus* Rs. 30 for conversion. On this basis, the price of sulphuric acid should be Rs. 80 per ton when the price of sulphur is Rs. 150 per ton. The cost of production of sulphuric acid has not been directly investigated by the Board and it is therefore not possible to arrive at a definite price for it. It is possible that the present conversion costs are greater in this country than are assumed in the formula mentioned above. Allowance has also to be made for the extra cost involved in packing and freight. Taking all these factors into consideration and in view of the fact that the price of sulphuric acid at present is as high as Rs. 280 per ton, we have taken for the purpose of the bichromates industry, a price of Rs. 160 per ton for the supply of sulphuric acid. The Board feels strongly that sulphuric acid, which enters into the production of so many chemicals, drugs and pharmaceuticals, should be controlled so as to make the acid available to the manufacturing industries at a reasonable price. If the bichromates industry gets its requirements of sulphuric acid at a price other than Rs. 160 assumed by us, our calculation of cost of production and of the protective duty necessary will have to be correspondingly revised. The Board hopes, therefore, that it will be possible for Government to control the price of sulphuric acid so as not to exceed Rs. 160 in any case. Another point which we wish to urge at this stage is that a bichromate manufacturer should have his own production of sulphuric acid to attain really economical production. All the acid produced may not be absorbed in bichromate production and side lines may have to be developed for the purpose. We would advise the setting up of a three-tons-per-day plant as an adjunct to a bichromate factory with an output of not less than 600 tons per annum. This step may take a couple of years to achieve and so we have not based our calculation of cost of sulphuric acid on the possibility of its supply from the same factory.

(b) *Other raw materials.*—We have taken the price of chrome ore at Rs. 110 per ton as against the actual of Rs. 103 of the Premier Chromate and Chemical Works and Rs. 115 of the Pioneer Chromate Works. We have taken the price of soda ash at Rs. 200 per ton as we were assured that this was the prevailing price and that there was no possibility of a fall in it during the next three years. The price of lime stone has been taken at Rs. 36 per ton as against the actual of Rs. 34.75 of the Pioneer Chromate Works. The only other item in which a substantial change is made is power and fuel. The expenditure on this item in both the Pioneer and Premier Chromate Works is based on the consumption of 2.9 tons

of fuel oil which is regarded as extravagant and excessive. Instead, we have assumed a figure of 2.5 tons. This puts the cost of power and fuel at Rs. 140 per ton of sodium bichromate as against Rs. 184 and Rs. 175 of the Pioneer in the last quarter of 1945 and in the quarter ending March 1946, respectively. We have allowed interest on working capital at the rate of 4 per cent. on the total working capital required for an efficient factory with a minimum output of 600 tons per annum. Judging from the experience of the Pioneer Chromate Works, the working capital required for such a factory should be about Rs. 3 lakhs. In the column for credit for raw materials recovered, both the Pioneer and the Premier Chromate Works show nil, but in our estimate we have taken Rs. 40 per ton as credit for sodium sulphate at the rate of Rs. 2 per cwt. This is the minimum that should be expected and in fact, with proper development, the credit on account of this by-product should be considerably higher.

24. Taking the above calculations into consideration, we estimate the cost of production of one ton of sodium bichromate during the three years ending March 1949 on the assumption of an annual output of 600 tons as follows:—

Board's estimate of cost of production of sodium bichromate for 1946-1949 on an output of 600 tons per annum.

Particulars.	Quantity.	Rate per ton.		Amount per ton.
		TONS.	RS.	
I. Manufacturing expenses—				
1 (a) Chromo ore	1.7	110	187.0	
(b) Soda ash	1.0	200	200.0	
(c) Lime stone	1.25	36	45.0	
(d) Sulphuric acid	0.6	160	96.0	
				Total—Raw materials
				528.0
2 Power and fuel	2.5	51,127.5	139.5	
		(furnace oil).	Power oil.	
			12.0	
3 Ordinary current repairs and maintenance of buildings and machinery. .. .. ..	..	..	..	20.0
4 Labour (including bonus) .. .. ..	..	..	..	140.0
5 General services, supervision and local office charges. .. .. ..	..	..	..	67.0
6 Expenditure on quality control, research and development. .. .. ..	..	..	..	10.0
7 Packing charges .. .. ..	..	..	..	60.0
8 Miscellaneous, water, lighting, sundry stores, royalties, etc. .. .. ..	..	..	..	60.0
				Total
				1,024.5

Board's estimate of cost of production of sodium bichromate for 1946-1949 on an output of 600 tons per annum--cont.

Particulars.	Quantity.	Rate per ton.	Amount per ton. Rs.
II. Overhead charges -			
9 Depreciation	72.5
10 Interest (at 4 per cent. on working capital of Rs. 3 lakhs).	20.0
11 Managing agents' charges	Nil.
12 Directors' and auditor's fees	10.0
13 Insurance	
14 Rents, rates and taxes excluding } income-tax and royalties. }	2.03
15 Selling expenses	8.0
		Total ..	130.8
		Gross total (I and II) ..	1,155.3
		Credit for materials recovered ..	40.0
		Net cost ..	1,115.3
			Or Rs. 55.76 per cwt.

25. It was represented by some factories that the cost of production estimated by the Board may not be applicable to all factories, particularly in regard to the quantities and prices of the raw materials used. It is possible that a factory

Board's estimate to apply to industry as a whole. like Belagula in Mysore may have to spend more on soda-ash and fuel-oil, while it is compensated by lower cost on account of the chrome ore which is available in the vicinity; the Belagula factory is also more favourably situated than other factories in regard to the supply of sulphuric acid which is produced in the same place though by a separate concern. The Bombay factories are more favourably situated in regard to fuel oil and sulphuric acid but may have to spend a little more on chrome ore which may be coming either from Baluchistan or from Bihar. The Board is satisfied that, after making allowances for these advantages and disadvantages, the overall cost should be applicable to all the factories, *i.e.*, to the industry as a whole, and that the industry would find no difficulty in conforming to the Board's estimate if a real effort is made towards achieving as low a cost of production as is possible.

26. In order to arrive at the fair selling price, we have to add manufacturer's profit to the cost of production. **Fair selling price.** The total amount of fixed capital required for a factory with an output of 600 tons per annum should be, judging from the balance-sheet of the Pioneer Chromate Works, Rs. 3.4 lakhs. Although the previous Tariff Boards allowed 8 per cent. on the fixed capital, we have adopted a practice of allowing 10 per cent. in view of the altered circumstances prevailing to-day. At this rate, profit should be Rs. 34,000, *i.e.*, roughly Rs. 57 per

ton of sodium bichromate. Adding the profit of Rs. 57 to Rs. 1,115.3 (the cost of production), we arrive at the fair selling price of Rs. 1,172.3 per ton or Rs. 58.6 per cwt. of sodium bichromate. This is the minimum price which should be assured to the Indian producer if the industry is to be safeguarded.

27. The United Kingdom was the main source of supply of bichromates before the war and during the **Cost of imports.** wartime. The following table gives the c.i.f. price and landed cost of bichromate of soda imported from the United Kingdom :—

Description.	1936.	1937.	1938.	1939.	1940.	1941.	1942.
1 c.i.f. price per ton, Indian port—							
(1) In English currency £34 14 0 34 14 0 37 0 0 38 3 0 79 5 0 58 11 0 78 11 11							
(2) In Indian currency (1 s. 6 d. Rs. 462.67 462.67 493.33 508.67 1,056.67 780.67 1,020.95 per rupee).							
2 Duty at the rate of 30 per cent. on „ 138.80 138.80 148.00 152.60 317.00 234.20 306.23 c.i.f. value per ton.							
3 Port Trust and clearance charges „ 10.00 10.00 10.00 10.00 10.00 10.00 10.00 (at the rate of 8 annas per cwt.) per ton.							
4 Total landed cost per ton „ „ 611.47 611.47 651.33 671.27 1,383.67 1,021.87 1,337.18							
5 Total landed cost per cwt. „ „ 30.57 30.57 32.57 33.56 69.18 51.21 66.86							
6 Retail selling price per cwt. (10 per cent. over landed cost).	33.67	33.67	35.83	36.92	76.10	56.86	73.55

The latest quotation received by a leading importing firm is 8½d. per lb. c.i.f. Indian port, which works out at Rs. 52-14-0 per cwt. Adding As. 8 as clearing charges, we arrive at Rs. 53-6-0 per cwt., as landed cost ex-duty. The landed cost on a basis of 30 per cent. *ad valorem* duty would be Rs. 69-3-0 per cwt. Another importer of bichromates received a quotation, dated the 3rd April 1946, from an American supplier, which gives the landed cost ex-duty at Rs. 71-9-6 per cwt. This figure is based on a price of \$427.65 per ton c.i.f. Bombay. If 30 per cent. duty is added, the total landed cost comes to Rs. 92-15-0 per cwt. The importer admitted, however, that this was a very inflated price, and that one of the largest manufacturers of bichromates in the United States is expected to be in a position to supply sodium bichromate at the rate of 8 cents per pound f.a.s., the price of potassium-bichromate being 10 cents f.a.s. At this price, the c.i.f. price Bombay would be Rs. 1,025 per ton or Rs. 51-1-0 per cwt. The landed cost ex-duty would be Rs. 51-12-0 while the landed cost inclusive of duty at 30 per cent. *ad valorem* would be Rs. 67-2-0 per cwt. This is the minimum landed cost at which American sodium bichromate might be had in India. It must be mentioned however that this price has not so far been quoted by any American supplier. For the present, therefore, we must be guided by actual rather than possible quotations. The importer usually charges a profit margin of 10 per cent. on the landed cost in fixing the selling price. A comparison of the actual American and British c.i.f. prices shows that the British prices are lower than the American prices. We have accordingly adopted Rs. 53-6-0 per cwt. as the

landed cost ex-duty at which the imports may arrive in the country during the next three years.

28. *Protective duty.*—We have worked out that the fair selling price of sodium-bichromate under efficient and economic working in a factory with an output of 600 tons per annum should be Rs. 58·6 per cwt., and with a small margin in favour of the home manufacturer we put the figure at Rs. 60 per cwt. This price is based on the assumption that sulphuric acid will be made available to the industry at Rs. 160 per ton. We have also shown that the c.i.f. price of the cheapest of the foreign imports may be taken at Rs. 52-14-0 per cwt., which together with 8 annas landing charges per cwt., would place the landed cost ex-duty at Rs. 53-6-0 per cwt. The difference between the fair selling price and the landed cost ex-duty is thus Rs. 6-10-0 per cwt. (Rs. 60 minus Rs. 53-6-0 or Rs. 6-10-0). This difference can be made up by a duty of 11 per cent. of the c.i.f. price as against which there is at present a duty of 30 per cent. The industry is thus adequately protected by the existing duty. All that is required is to convert the present revenue duty into a protective duty and to provide for the variation of the duty whenever there is a fall in the c.i.f. price of foreign imports from the level assumed by the Board for the purpose of this investigation, so as to afford the necessary assurance of security to the indigenous producers. If the duty is 30 per cent. as suggested, the landed cost of imports from the United Kingdom would be as follows:—

	RS. A. P.
c.i.f. price per cwt.	52 14 0
Duty at 30 per cent.	15 13 0
Landing charges	0 8 0
 Total landed cost	 69 3 0
 Selling price	 75 0 0

There would thus be a margin of nearly Rs. 15 per cwt. in favour of the home producer. This margin should provide a sufficient cushion for the adjustment of cost of production in the event of prices of some of the raw materials rising or some of the factories finding it difficult to conform to the Board's estimate of what the cost of production should be.

29. *Minimum c.i.f. price for variation of duty.*—We may now work back from the fair selling price of Rs. 60 per cwt. to what will be the c.i.f. price at which competition from abroad may become real. The c.i.f. price corresponding to the landed cost of Rs. 60 is approximately Rs. 46. Only when it falls below Rs. 46 per cwt., will the home industry be threatened with a degree of

competition from abroad which will necessitate the invocation of section 4 of the Tariff Act to maintain the measure of protection to the industry as recommended by the Board.

30. *Duration of duty.*—The protective duty of 30 per cent. *ad valorem* should be imposed immediately and remain for the period ending 31st March 1949. The *ad valorem* revenue duty has so far worked well in this case and we do not recommend its conversion into a specific duty notwithstanding our general preference for specific duties.

31. The incidence of cost of bichromates on cost of production of finished goods by the consuming industries **Burden of protection.** was examined in consultation with representatives of the consuming industries. In the textile industry, bichromates account for 5 per cent. of the cost of the khaki cloth, in which they are used for mineral khaki dyeing. In the tanning industry, the bichromates account for 4 per cent. of the cost of tanned leather. Thus it was ascertained that before the war bichromates cost 2 pies per square foot of tanned leather, which was valued at 8 annas. Currently, bichromates cost 0·6 anna per square foot of leather, the price of which is Re. 1 per square foot. The proportion of cost of bichromates in the cost of production of paints and pigments is on the other hand very high, being in the neighbourhood of 60 per cent. It will thus be seen that, barring the paint industry, the incidence of cost of bichromates on cost of production of the finished article is not considerable. In any case, this point is not of much importance in the present investigation in view of the fact that we are not recommending any increase in duty but only the conversion of the existing revenue duty into a protective duty. It can therefore be said that there will be no increase in the cost to the consumer as a result of the imposition of the protective duty as recommended, though an indirect burden may be said to result in so far as a decline in the cost to the consumer, which might otherwise occur, may be prevented.

32. Though some of the factories engaged in production will no doubt disappear with the onset of competition, **Eligibility for protection.** the Board is satisfied that the industry as a whole is well established and conducted on sound and efficient lines. The management of some of the factories are alive to the need for (a) research and experimentation, with special reference to economic utilization of by-products, and (b) capturing foreign markets without subsidization by the State.

33. As for the second condition, a comparison of costs of production with c.i.f. prices has already revealed that the Indian product can compare favourably in regard to price with either the British or the American product. The industry has thus already developed sufficiently to be able to carry on successfully without material protection or State assistance. This is a noteworthy

achievement, considering that the industry is only five years old, that the Indian output is a fraction of the output of some of the biggest factories in other countries and that factories had to be rigged up in wartime with indifferent material and often in the midst of serious handicaps. The assurance of protection given by the State to the bichromates industry in 1940 stated that the industry had served a vital national purpose at a crucial period, thus also fulfilling condition 2 (b) of the conditions laid down for eligibility for protection, *vide* paragraph 2 above. In short, the industry is qualified for protection or assistance.

34. (a) *Facilities for export trade.*—The All-India Bichromate Manufacturers' Association has, on behalf of ~~Proposals for other assistance examined.~~ the industry as a whole, asked for assistance in certain ways in addition to protective duty. One request is for facilities for export trade. It has been stated that the prices quoted by British exporters for the Indian market are very much lower than for some of the overseas markets. For instance, a British firm recently quoted to a Norwegian enquirer a price of £102-13-0 f.o.b. England for sodium bichromate and £117-17-0 for potassium bichromate. Prices for the same articles for the Indian market are £76-11-0 and £73-10-0 per ton delivered ex factory and naked respectively. Some of the Indian producers wish to take advantage of this position and establish export contacts in foreign countries. Under these circumstances, the Board recommends that Government should give facilities for export of Indian bichromates. The industry is not asking for any monetary assistance for the purpose of establishing the export markets.

(b) *Rebate of duty on raw materials.*—Another request of the Association is that rebate of duty should be granted in respect of raw materials consumed by the bichromates industry. This point becomes irrelevant in view of our finding that the cost of production even after payment of duty on raw materials is well below the c.i.f. price at which imports can be landed in the country. It is only when the home producer is under-cut by imports from abroad that the question of rebate of duty will assume importance justifying serious consideration.

(c) *Export of Baluchistan ore.*—A further point urged by the Association is that superior grade of chrome ore from Baluchistan is exported to the United Kingdom while ore of lower grade is being supplied to the Indian manufacturers and that if the Indian manufacturer got superior ore, his cost of production would be lower and he would be better able to face competition from abroad. Here again, in view of our conclusion that the cost of production of bichromates in India is well below the cost of importation, the point loses its significance. Moreover, we are not satisfied that export of superior grade ore to the United Kingdom directly hits the Indian bichromates industry.

(d) *Freight rates.*—The question of railway freight affects all industries and is one for the Railway Rates Advisory Committee to tackle.

35. It follows therefore that barring the protective duty and **Restriction on the steps to be taken by Government to make imports.** sulphuric acid available to the industry at Rs. 160 per ton, no other form of State assistance is called for. The Association pleaded for complete prohibition of imports in view of the fact that the Indian capacity far exceeds the Indian requirements and quoted the example of the British Dyestuffs industry in support of its demand. We are, however, not in favour of the suggestion that prohibition of imports should be continued indefinitely. The present restriction on imports should continue until effect is given to our recommendations.

36. All our discussion has so far pertained to sodium bichromate.

Potassium bichro. Potassium bichromate is used mainly in the match industry and forms a small proportion of the total quantity of bichromates produced and consumed in the country. The price of potassium bichromate varies directly with the price of sodium bichromate as the latter is the base for the production of the former. The same duty which is imposed on sodium bichromate will be sufficient to protect potassium bichromate against imports from abroad.

37. We have considered the case of chrome compounds, such

Chrome compounds. as chrome alum, chrome acetate and chrome pigments. There is a possibility of some of these articles being imported as such or under proprietary names so as to neutralize the protection which may be granted to the sodium and potassium bichromates industry. The All-India Bichromate Manufacturers' Association pressed that the imports of these compounds should be prohibited altogether, but we are not in favour of such action. We feel that if a 30 per cent. *ad valorem* duty is imposed on all chrome compounds as in the case of bichromates, the indigenous bichromates industry may not be affected adversely and there may be little danger from competition arising from the import of chrome compounds. The position should therefore be watched so that action could be taken in the event of chrome compounds being imported to the detriment of the bichromates industry. We accordingly recommend that there should be one head in the tariff schedule comprising sodium bichromate, potassium bichromate and chrome compounds, and that for all these items, there should be a protective *ad valorem* duty of 30 per cent.

38. Our recommendations and conclusions are stated as under:—

Recommendations and conclusions. (1) The present **revenue** duty of 30 per cent. *ad valorem* should be immediately made into a protective duty which should be levied till the end of March 1949 (paragraph 28).

(2) Rupees 46 per cwt. should be taken as the limit for the c.i.f. price for the purpose of section 4 of the Indian Tariff Act, and if the c.i.f. price falls below that figure, the quantum of duty should be raised so as to maintain the measure of protection recommended by the Board, the fair selling price being assumed to be Rs. 60 per cwt. (paragraph 29).

(3) Government should take steps to ensure that sulphuric acid is made available at a price not exceeding Rs. 160 per ton to bichromates manufacturers [paragraph 23(a)].

(4) The same duty of 30 per cent. *ad valorem* should apply to sodium bichromate, potassium bichromate and all chrome compounds, which all together should form one item in the tariff schedule (paragraph 37).

(5) Restriction on imports should continue until effect is given to our recommendations (paragraph 35).

(6) The All-India Bichromate Manufacturers' Association should make arrangements for supplying standard quality of bichromates to consuming industries, and particularly to the paint and tanning industries. The quality should be at least 98 per cent. pure, the sodium sulphate content should not exceed 1 per cent. and the packing should be air tight (paragraph 20).

(7) The industry is advised to use lime stone instead of lime as a possible factor in the reduction of cost of production (paragraph 22).

(8) The industry is advised to undertake its own production of sulphuric acid in its campaign for a reduction in the cost of production. Action taken on this recommendation by the industry should be a relevant consideration if and when the industry comes up again for protection [paragraph 23 (a)].

(9) The All-India Bichromate Manufacturers' Association should actively undertake or support research on adequate scale for the recovery and economic disposal of sodium sulphate (paragraph 11).

(10) Government should grant facilities to bichromates manufacturers for export of bichromates to foreign countries [paragraph 34 (a)].

39. The Board wishes to take this opportunity to acknowledge with thanks the very helpful and valuable **Acknowledgments.** co-operation and advice received by it from Dr. J. N. Ray of the Department of Industries and Supplies. Thanks of the Board are also due to Dr. Madan, its Deputy Secretary, for his valuable assistance throughout the investigation and preparation of report, to Mr. Raghava Rao, the Cost Accounts

Officer attached to the Board, for carrying out cost investigation of certain producers at very short notice, to Dr. Damle of the Bombay Government for his very useful advice and to Dr. Kelkar, Technical Adviser to the Board for general help throughout the inquiry.

SHANMUKHAM CHETTY,
President.

C. C. DESAI,
Member-Secretary.

NAZIR AHMAD,
Member.

H. L. DEY,
Member.

B. K. MADAN,
Deputy Secretary.

OOTACAMUND, the 21st May 1946.



APPENDIX I.

*Department of Commerce (Tariffs) Resolution No. 218-T (55)/45,
dated New Delhi, the 3rd November 1945.*

In the statement on industrial policy issued by the Government of India on the 23rd April 1945, it was announced that, pending the formulation of a tariff policy appropriate to the post-war needs and conditions of the country and the establishment of permanent machinery for the purpose, Government would set up machinery for investigating claims from industries, which have been started or developed in wartime and which are established on sound lines, to assistance or protection during the transition period. A press communiqué issued on the same date invited industries to address their claims to the Secretary to the Government of India in the Department of Commerce.

2. Several industries have accordingly applied for assistance or protection, and on a preliminary examination of their claims, the Government of India have come to the conclusion that applications submitted by the following industries call for a detailed examination :—

- (i) non-ferrous metals, including antimony ;
- (ii) grinding wheels ;
- (iii) caustic soda and bleaching powder ;
- (iv) sodium thiosulphate, sodium sulphite anhydrous, sodium bisulphite ;
- (v) phosphates and phosphoric acid ;
- (vi) butter colour, aerated water powder colour ;
- (vii) rubber manufactures ;
- (viii) fire hose ;
- (ix) wood screws ;
- (x) steel hoops for baling.

Other applications are under the consideration of Government, and further action in their case will be taken in due course.

3. In addition to the industries which have applied for assistance or protection, there are certain industries the starting of which was considered essential by the Government of India under conditions created by the war. Early in 1940, Government announced that specified industries promoted with their direct encouragement during wartime might feel assured that, if they were conducted on sound business lines, they would, by such measures as Government might devise, be protected against unfair competition from outside India. In accordance with this decision, the following industries have been given an assurance of protection against unfair competition after the war :—

- (i) bichromates ;
- (ii) steel pipes and tubes up to a nominal bore of 4 inches;
- (iii) aluminium ;
- (iv) calcium chloride ;
- (v) calcium carbide ;
- (vi) starch.

Of these industries, only those engaged in the manufacture of bichromates, calcium chloride and starch have so far applied for assistance or protection during the transition period. The Government of India consider that the applications submitted by these three industries also call for immediate investigation.

4. For the purpose of these and any subsequent investigations, the Government of India have decided to set up a Tariff Board for a period not exceeding two years, in the first instance. The Board will consist of :—

PRESIDENT :

Sir R. K. Shanmukham Chetty, K.C.I.E.

MEMBERS :

Mr. C. C. Desai, C.I.E., I.C.S.

Prof. H. L. Dey, D.Sc. (Lond.).

The Board will include one more Member whose name will be announced shortly. Mr. Desai will act as Secretary to the Board in addition to his duties as Member.

5. The Tariff Board is requested to undertake, in such order as it thinks fit, the investigation of claims put forward by the industries specified in paragraphs 2 and 3 above. In the case of each industry the Board will, after such examination as it considers necessary, report whether the industry satisfies the following conditions :—

(1) that it is established and conducted on sound business lines ; and

(2) (a) that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance ; or

(b) that it is an industry to which it is desirable in the national interest to grant protection or assistance and that the probable cost of such protection or assistance to the community is not excessive. Where a claim to protection or assistance is found to be established, i.e., if condition (1) and condition (2) (a) or (b) are satisfied, the Board will recommend—

(i) whether, at what rate and in respect of what articles, or class or description of articles, a protective duty should be imposed ;

(ii) what additional or alternative measures should be taken to protect or assist the industry : and

(iii) for what period, not exceeding three years, the tariff or other measures recommended should remain in force.

In making its recommendations the Board will give due weight to the interests of the consumer in the light of the prevailing conditions and also consider how the recommendations affect industries using the articles in respect of which protection is to be granted. Since relief, to be effective, should be afforded without delay, the ~~Board~~ is requested

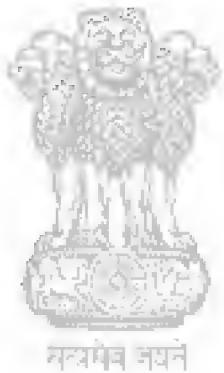
to complete its enquiries with all possible expedition and to submit a report as soon as the investigation of the claim of each industry is concluded.

6. The headquarters of the Board will be at Bombay, but it will visit such other places as it thinks necessary for purposes of its enquiries. Firms and persons interested in any of these industries, or in industries dependent on the use of the products of these industries, who desire that their views should be considered, should address their representations to the Secretary to the Board.

7. Any claims hereafter received from other industries which in the opinion of the Government of India are suitable for examination by the Board will be referred to the Board in due course for examination.

8. The Government of India trust that Provincial Governments and Administrations will afford the Board all the assistance which it may require and will comply with any request for information which may be addressed to them by it.

N. R. PILLAI,
Secretary.



APPENDIX II.

Names of witnesses, interests represented by them and the dates on which they were examined.

Consumers—

	Date.
Mr. W. R. Monk, Shalimar Paint Colour and Varnish Co., Ltd., Association of Paint Colour and Varnish Manufacturers in India, Royal Exchange, Calcutta. (Paint Industry.)	18th April 1946
Mr. C. W. H. P. Waud, Hard-castle Waud & Co., Ltd., Bombay. (Paint Industry.)	Do.
Mr. R. S. Pandit, Joint Managing Director and Jal N. Bhaisa, Esq., Chief Chemist, Western India Tanneries, Bombay. (Tanning Industry.)	Do.
Mr. J. B. Sane, M.Sc. (Toch.), A.R.I.C., Khatau Makanji Spinning and Weaving Co., Ltd., Ballard Estate, Bombay. (Textile Industry.)	Do.
Mr. R. A. Gokran, Morarjee Gokuldas Spinning and Weaving Co., Ltd., Sopari Baug Road, Parel, Bombay. (Textile Industry.)	Do.

Importers—

Mr. N. K. Shahane, Sales Manager, Kantavala Nanavathi & Co., Ltd., Apollo Street, Bombay.	20th April 1946.
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Producers—

Mr. B. S. Lalkaka and Dr. L. A. Bhatt, All-India Bichromate Manufacturers' Association, Currimbhoi House, Outram Road, Fort, Bombay.	18th April and 19th April 1946.
* Mr. Purushottamdas Popatlal, Pioneer Chromate Works, Bombay.	Do.
* Mr. Lalbhai P. Patel, Premier Chromate and Chemical Works, Ltd., Bombay.	Do.
* Mr. G. S. Thorpe, Buckingham and Carnatic Co., Ltd., Madras.	Do.
* Mr. H. V. Sreenivasa Rangaehar, Works Manager, Government Dichromate Factory, Belagula.	Do.
Mr. Mohanlal T. Shah, Indentors' Syndicate, Advani Chambers, Sir P. M. Road, Bombay.	Do.

* Indicates Member of the All-India Bichromate Manufacturers' Association.

APPENDIX III.

List of manufacturers with their rated capacity and actual production.

Name of firm.	Location.	Year of commencement of production.	Actual production.			Annual maximum production capacity.	
			1943.	1944.	1945.		
1 Union Chemical Industries Company, Limited.*	Calcutta	1943	25	9	7	36	56
2 Bengal Chemical and Pharmaceutical Works.	Do.	1941	1	15	Nil.	1 and 5 cwt.	48 but capable of expansion to 192 tons.
3 Chemical Corporation of India.	Do.	1941	18	6	5	45	70
4 Calcutta Industrial Chemical and Minerals.	Do.	..	6	2	Nil.	Out of production.	Not known.
5 Colour and Chemicals, Limited.	Do.	..	27	5	..	Do.	80
6 M. L. Ghosh and Company	Do.	..	3	5	..	Do.	Not known.
7 Krishna Chemical Works	Do.	1945	Nil.	Nil.	18	100	
8 Indentors' Syndicate	Bombay	1940	133	13	160	138	480
9 Golden Chemicals, Limited	Do.	1942	112	4	180	180	540
10 Pioneer Chromate Works	Do.	1941	124	1	180	406	600
11 Premier Chromate and Chemical Works.	Do.	1941	204	6	500	689	900
12 Indian Chemical Company	Do.	..	1	0	Nil.	Nil.	52
13 Buckingham and Carnatic Mills.	Madras	1940	1,188	4	1,020	995	1,080
14 Cawnpore Chemical Works.	Cawnpore	1941	679	9	600	526	1,200
15 Mysore Government Detergent Factory.†	Mysore State.	194	75	5	230	194	240
16 Kap Chemicals	Jwalpur	..	58	15	Nil.	Out of production.	600
17 Associated Chemicals, Limited.	Nagpur	1941	12	7	Nil.	5	180
			2,769	6	2,882	3,228	6,226

* New factory with a capacity for 1,000 tons per annum under construction. Manufacture potassium and ammonium bichromic acid also.

† Being expanded to 600 tons capacity.

APPENDIX IV.

*Notification of the Government of India, Department of Supply,
dated New Delhi, the 25th October 1945.*

No. SS/45.—In exercise of the powers conferred by sub-rule (2) of Rule 81 of the Defence of India Rules, the Central Government is pleased to make the following Order, and to direct with reference to sub-rule (1) of Rule 119 of the said Rules that notice of the Order shall be given to the public by publishing it in the *Gazette of India*:

THE CHROME COMPOUNDS CONTROL ORDER, 1945.

1. (1) This Order may be called the Chrome Compounds Control Order, 1945.

(2) It extends to the whole of British India.

(3) It shall come into force at once.

(4) The Chrome Compounds Control Order, 1944, is hereby repealed, provided that anything done under any of the provisions of that Order shall be deemed to have been done under the corresponding provisions of this Order.

2. In this Order,—

(a) "chrome compound" includes potassium bichromate, potassium chromate, sodium bichromate, sodium chromate and chrome alum;

(b) "Director, Chemicals" means the Director, Chemicals, in the Directorate-General of Supply, Government of India, New Delhi, and includes any officer authorized by him to perform all or any of the functions of the Director, Chemicals, under this Order.

(c) "Textile Commissioner" means the Textile Commissioner with the Government of India, Ballard Estate, Bombay, and includes any officer authorized by him to perform all or any function of the Textile Commissioner under this Order.

3. No person shall sell or otherwise dispose of any chrome compound except on presentation by the purchaser or other recipient of a valid licence in the form appended to this Order granted by the Director, Chemicals or the Textile Commissioner and in accordance with the terms and conditions of such licence:

Provided that no such licence shall be necessary for the sale of sodium bichromate or potassium bichromate to the extent of 2 cwt. per customer per month. Monthly statements showing the quantities of sodium bichromate and potassium bichromate and the names and addresses of the customers to whom the quantities are sold under the proviso shall be submitted to the Director, Chemicals, so as to reach him by the 10th of every month. The statements shall also indicate the quantity in stock on the 1st of each month, the quantity sold against licences granted to customers and the balance in stock at the end of the month.

4. Applications for licences to purchase or otherwise acquire chrome compounds, shall be made in duplicate in the form appended to this Order to the Textile Commissioner or the Director, Chemicals, according as the chrome compounds are required for use in a textile industry or for other purposes.

5. (1) The Textile Commissioner or, as the case may be, the Director, Chemicals may in his discretion reject or grant in whole or in part any application made under clause 4 and shall, if he rejects the application, inform the applicant, and if he grants it, issue a licence in the form appended to this Order, specifying therein—

- (i) the quantity and type of chrome compounds to be supplied under the licence ;
- (ii) the name of the supplier from whom the chrome compounds may be obtained under the licence ; and
- (iii) the period for which the licence shall be valid.

(2) The licensing authority may also specify in the licence the price at which the chrome compounds will be supplied to the licensee and require the licensee to deposit with Government such sum as may be specified in the licence representing the whole or part of the price payable for the supply.

6. Every person who manufactures, consumes, holds stocks of, or deals in, any chrome compound shall maintain a true and accurate stock register showing the quantity of each type of chrome compound produced, acquired and disposed of by him from time to time and the daily and monthly balance of stocks held, and shall make the register available for the inspection of any person authorized in this behalf by the Textile Commissioner or the Director, Chemicals.

7. The Textile Commissioner or the Director, Chemicals, may, with a view to securing compliance with this Order,—

- (a) require any person to give any information in his possession with respect to any business carried on by that or any other person ;
- (b) inspect or cause to be inspected any books or other documents belonging to or under the control of any person ;
- (c) enter and search, or authorize any person to enter and search, any premises, and seize, or authorize any person to seize, any chrome compounds in respect of which he has reason to believe that a contravention of this Order has been committed.

8. No person shall, with intent to evade any provision of this Order, refuse to give any information lawfully demanded from him under clause 7, or conceal, destroy, mutilate or deface any book or other document.

9. Any court trying a contravention of clause 3 of this Order may, without prejudice to any other sentence which it may pass, direct that any chrome compound in respect of which it is satisfied that that clause has been contravened shall be forfeited to His Majesty.

FORM.

(See Clauses 3, 4 and 5.)

(To be submitted in duplicate.)

PART I.

Application for permission to purchase or otherwise acquire chrome compounds (sodium bichromate, potassium bichromate, potassium chromate, sodium chromate or chrome alum).

- 1 Date.
- 2 Name of applicant.
- 3 Address of applicant.
- 4 Type of quantity of chrome compound required.
- 5 Quantity of chrome compounds held by applicant on the date of the application.
- 6 Name of person or firm from whom applicant prefers to purchase.
- 7 Purpose for which quantity in head 4 is required—
 - (a) whether for use in a Textile Industry.
 - (b) whether for use for any other purpose.
- 8 If use in head 7 is for Textile Industry,—
 - (i) number and date of the Textile Commissioner's order if any, for execution of which the purchase of chrome compounds is necessary, and/or
 - (ii) Whether for use for production of textile goods for civil consumption.
- 9 If use in head 7 is for a purpose other than Textile Industry,—
 - (a) precise purpose for which the purchase is necessary.
 - (b) average monthly consumption for the said purpose during the twelve months previous to the date of the application.

I certify that the contents of this application are true to the best of my knowledge and belief.

Signature of applicant.

PART II.

Licence No. .

I hereby sanction subject to compliance with the instruction herein contained the sale of (quantity) of

Sodium.
Potassium.
Chrome Alum. } Bichromate/Chromate

by (name of seller) to

(name of applicant) at the following prices, namely :—

Please deposit Rs. being (a part of) the purchase price of the chrome compounds covered by this licence, in a Government Treasury or a branch of the Reserve Bank of India or of the Imperial Bank of India, and forward a copy of the receipted challan to (name of supplier). No supplies will be made to you under this licence unless the treasury receipt is delivered to the supplier.

This licence shall be valid from to

Director, Chemicals/Textile Commissioner,
New Delhi/Bombay.

Copy forwarded to (supplier) for advance information.



APPENDIX V.

(1) Statement showing the quantity, value and average value per cwt. of imports of sodium bichromate into India since 1936-37.

		1936-37.	1937-38.	1938-39.	1939-40.	1940-41.	1941-42.	1942-43.	1943-44.	1944-45.
I. Quantity of imports from—	Cwt. (000)									
1 United Kingdom	11.33	15.35	10.72	4.82	9.95	20.62	19.82	39.99	39.99	
2 Japan	1.97	0.43	0.79	1.95	3.01	..	..	..	..
3 Germany	1.97	3.55	1.78	0.79	..	..	..	..	..
4 China	..	..	..	0.13	0.05	..	..	..	..
5 U.S.A.	..	..	0.50	1.21	9.75	53.41	26.76	6.41	7.86	
6 Other countries	..	..	0.63	0.22	..	..	..	..	..
Total	..	Do.	16.40	20.76	14.39	17.47	66.41	47.38	26.33	47.85
II. Value of imports from—	Rs. (Lakhs)									
1 United Kingdom	2.55	3.51	2.61	1.71	4.99	8.27	8.71	18.96	18.96	
2 Japan	0.39	0.08	0.12	0.64	3.06	..	..	..	..
3 Germany	..	..	..	0.41	0.19	..	..	..	..
4 China	..	..	..	0.41	0.10	0.02	..	..	..
5 U.S.A.	..	..	0.11	0.27	7.45	28.13	9.25	2.23	3.38	
6 Other countries	..	..	0.15	0.04	0.01	..	..	..	..
Total	..	Do.	3.61	4.66	3.41	10.09	36.20	17.51	10.93	22.34
III. Average value per cwt. of imports from—	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.
1 United Kingdom	..	..	22.8	22.14	24.6	25.7	50.2	40.1	43.15	47.7
2 Japan	..	..	19.11	19.4	15.5	32.0	101.10	..	..	..
3 Germany	..	..	21.1	21.5	23.5	23.12	..	..	..	..
4 China	..	..	..	22.1	22.7	23.13	76.7	52.11	34.9	34.13
5 U.S.A.	..	..	..	..	..	..	..	..	..	42.15
Total, imports	..	..	22.0	22.7	23.11	57.12	54.8	37.0	41.11	46.11
										48.11

* For 8 months only—April to November 1945.

Note.—The totals are corrected to two decimals from the original totals.

(2) Statement showing the quantity, value and average value per cwt. of imports of potassium dichromate into India since 1936-37.

1936-37. 1937-38. 1938-39. 1939-40. 1940-41. 1941-42. 1942-43. 1943-44. 1944-45. 1945-46

I. Quantity of imports from—

		Cwt. (000)	1-36	0-96	0-63	1-01	0-17	..	..	..	..
1 United Kingdom	..	..	Do.	2-33	2-87	1-45	0-77	..	..	..	..
2 Germany	..	..	Do.	2-01	1-38	1-08	2-03	0-79	..	..	..
3 Japan	..	..	Do.	..	..	..	0-50	0-14	..	..	..
4 China	..	..	Do.	0-18	0-45	0-81	1-95	5-54	1-60	0-10	..
5 U.S.A.	..	..	Do.	0-27	0-05	..	0-04	0-34	..	..	..
6 Other countries	..	..	Do.	..	..	..	..	..	..	..	..
Total	..	* 6-02	5-51	3-97	6-30	6-93	1-60	0-10	..	..	0-58

II. Value of imports from—

		Rs. (000)	38-63	28-19	19-01	67-49	11-73	0-09	0-08	..	..
1 United Kingdom	..	..	Do.	68-48	69-37	38-97	21-17	..	..	..	..
2 Germany	..	..	Do.	45-87	33-37	23-44	162-15	73-73	..	..	..
3 Japan	..	..	Do.	..	..	..	38-25	12-97	..	..	..
4 China	..	..	Do.	4-63	11-70	21-88	150-74	368-28	64-80	6-37	..
5 U.S.A.	..	..	Do.	4-35	1-30	0-03	1-90	22-01	..	..	..
6 Other countries	..	..	Do.	..	..	..	..	..	..	..	..
Total	..	* 147-99	143-93	103-33	441-70	478-71	64-88	6-45	..	..	89-48
											0-05

III. Average value per cwt. of imports from—

		RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.	RS. A.
1 United Kingdom	..	..	..	..	28 8	29 8	30 1	66 15	68 9	..	..
2 Germany	..	..	..	..	25 2	25 15	26 14	27 6	..	..	..
3 Japan	..	..	..	..	22 14	24 2	21 11	79 13	93 1	..	..
4 China	..	..	..	..	..	..	..	75 14	92 10	..	..
5 U.S.A.	..	..	..	..	23 11	26 0	27 0	77 4	64 11	40 9	63 11
Total, imports	..	24 9	26 2	26 0	70 3	68 9	40 10	64 9	..	..	154 0 47 0

* Excluding imports into Burma.

Note.—The totals are corrected to two decimals from the original totals.
† 8 months—April to November 1945.